WINCOR NIXDORF

BA69W

LC-Display 5,7'' black/white

User Guide

BA69W

User Guide

Edition August 2004

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Manufacturer´s Certification

CE

The device complies with the requirements of the EEC directive 891336/EEC with regard to ‘Electromagnetic compatibilily".

Therefore, you will find the CE mark on the device or packaging.

Important notes

The display BA69W conforms to the current safety standards for data processing equipment.

- ❒ If this device is taken from a cold environment into the operating room, moisture condensation may form. The device must be absolutely dry before being put into service; an acclimatization period of at least two hours must therefore be observed.
- ❒ This device is equipped with a safety-tested power cable and may be connected only to a prescribed grounded-contact power socket.
- ❒ When setting up the device, ensure that the power socket on the device and the grounded-contact power socket are easily accessible.
- ❒ To disconnect the device from the supply voltage completely, switch off the POS System and disconnect the power plug.
- ❒ Ensure that no foreign objects (e.g. office clips) find their way into the device, as this may lead to electric shocks or short-circuits.
- ❒ In order to ensure that the device is well ventilated and to prevent overheating, do not obstruct the ventilation slots on your device.
- ❒ Never plug in or unplug data communication lines during thunderstorms.
- ❒ Protect devices from vibrations, dust, moisture and heat.
- ❒ In emergencies (e.g. damaged housing or damaged power cable, penetration by liquids or foreign bodies), the device must be switched off immediately, the power plug disconnected and the Customer Service of Wincor Nixdorf International GmbH or your dealer must be notified.

The device may only be repaired by authorized qualified personnel. Unauthorized opening of the device and inexpertly carried-out repairs may not only seriously jeopardize the safety of the user, but also cancel all warranty and liability agreements.

Warranty

Wincor Nixdorf (WN) guarantees a limited warranty engagement for 12 months beginning with the date of purchasing. This warranty engagement covers all those damages which occur despite a normal use of the product.

Damages because of

- improper or insufficient maintenance,

- improper use of the product or unauthorized modifications of the product,

- inadequate location or surroundings

will not be covered by the warranty.

For details please consult your contract documents.

All parts of the product which are subject to wear and tear are not included in the warranty engagement of Wincor Nixdorf. Please order spare parts at the WN customer service.

Introduction

The BA69W liquid-crystal display is a tailor-made operator display for modern cash-register applications with an embedded scale solution.

The BA69W has a 5.7" screen for black/white presentation and is designed with STN technology.

The flat screen provides standard VGA compatibility in the 1/4-format of a standard screen. As a result, graphic user interfaces are presented with a high information content that is easily viewed for both customers and operators. Graphics capability and different fonts make the configuration of the information which is presented a pleasure.

The display can be integrated into your cash-register system in different ways. You may select between the version with its own base stand, a tube assembly, or assembly on the TA85 keyboard.

There are two buttons on the BA69W for tare and zero setting. These buttons are necessary for the scale solution.
The BA69W is used as a combined POS and scale display.

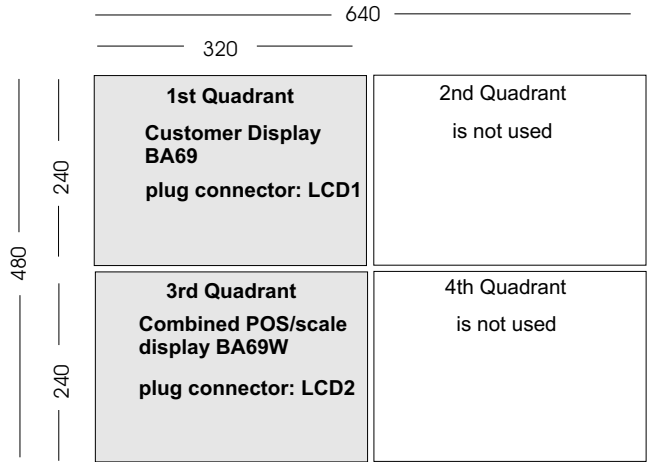
There are two ways for connectin the display:

- **VGA/4 controller MUX**
  To this controller you can connect a BA69W and a BA69 in parallel. In this case they are used as a customer display or a operator display. This solution runs with MS-DOS operating system.

- **VGA/4 embedded scale controller**
  Connect a BA69W to this controller as a combined POS and scale display. This solution runs with Windows / Linux operating systems.

What does VGA/4 mean?

VGA/4 means that 1/4 of a full screen is utilized for every display. The illustration shows the arrangement of the VGA quadrants (320x240 picture elements) for the operator and customer displays to the standard for a VGA screen with a resolution of 640x480 picture elements.



It should be noted here that, in comparison with a standard VGA screen, the entire right half of the screen is not visible. As a result, standard applications cannot be displayed at the BA69W.

You can only use software which has been appropriately adapted.

About the manual

References in the Manual are indicated by this symbol.

This symbol is used for cautions and warnings.

Cleaning the BA69W

During cleaning, be absolutely sure that the cash-register system is shut off, that the power cable has been disconnected, and that no moisture is allowed into the interior of the display.

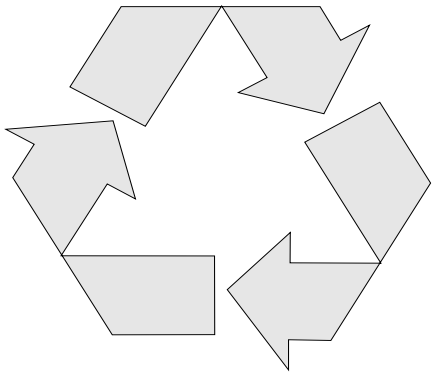
Clean your BA69W at regular intervals with a cleaner which is suitable for plastic surfaces. This cleaner may be ordered from Wincor Nixdorf-Plus.

Clean the protective glass with a commercially-available glass cleaner.

Clean the internal display module with a lint-free cotton cloth only.

For information on gaining access to the protective glass, refer to the chapter on “Changing the protective glass cover.”

Recycling the BA69W



Environmental protection does not begin when it comes time to dispose of a device; it begins with the manufacturer.

The LC-Display BA69W is manufactured without the use of CFCs und CCHS and is produced mainly from reusable components and materials.

The processed plastics can, for the most part, be recycled. Even the precious metals can be recovered, thus saving energy und costly raw materials.

At this time, there are still some parts that are not reusable. Wincor Nlxdorf guarantees the environmentally safe disposal of these parts in a Recycling Center, which is certified pursuant to ISO 9001.

So don’t simply throw your BA69W an the scrap heap when it has served its time, but take advantage of the environmentally smart, up-to-date recycling methods!

Our environmental protection section is always ready to answer any questions you may have about our environmental protection policies.

Or visit us on the Internet: www.wincor-nixdorf.com

Before assembling

Unpacking and checking the packing list

Unpack the parts and check to be sure that the packing list agrees with the specifications on the bill of delivery.

If you determine that there is shipping damage or discrepancies between the packing list and the bill of delivery, please inform your contract affiliate or the sales office of Wincor Nixdorf immediately.

We recommend that you keep the original packaging in case it should be necessary to ship the equipment again (protection from shock and impact).

Wiring connections for the BA69W

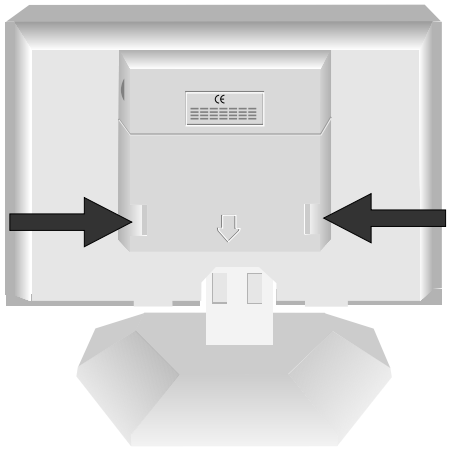
The installation of the system should be performed in the sequence given in the following description:

- Be sure that the power plug of the cash-register system has been disconnected.
- Plug the data cable in the BA69W and the jack of the controller on the cash-register system.
- Plug in the power cable of the cash-register system into the socket again.

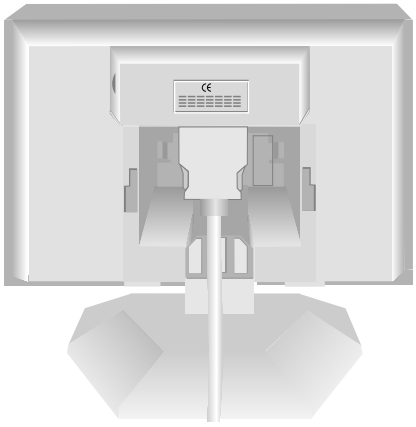
Never plug in the data cable or power supply cable when the system is switched on.

Data cable plug connection

Grasp the cable cover panel at the locations marked by the arrows. Pull the cable cover panel downward and remove it to the rear.



Push the data cable into the BA69W display as shown in the illustration until you hear an audible click as it engages. Then replace the cable cover panel.

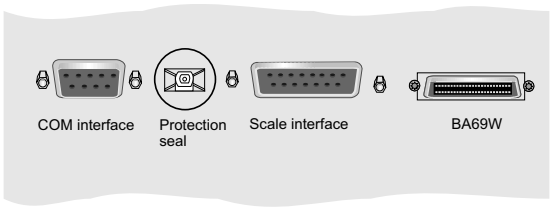


Connection to the VGA/4 controller MUX

Two liquid-crystal displays can be connected to the supplied controller. The BA69W display is always connected at the LCD2 jack. Insert the data cable into the corresponding jack until the plug connector engages audibly.

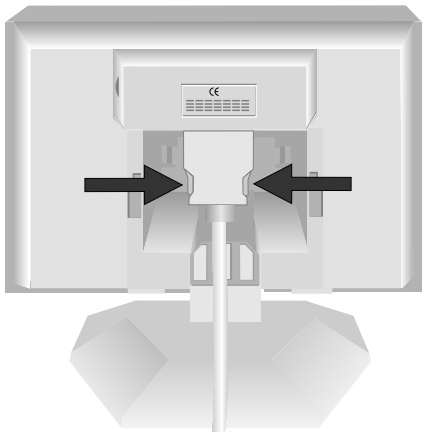
Connection to the VGA/4 embedded scale controller

The BA69W display is connected at the BA69W jack. Insert the data cable into the corresponding jack until the plug connector engages audibly.



Disconnecting the cable

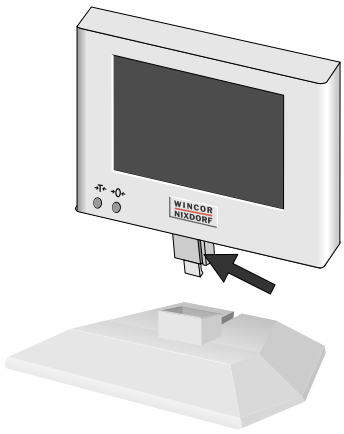
Remove the cable cover panel (refer to the previous page). Never disconnect cables by pulling on the cable itself. To disconnect the cables, press on the releases on the plug connector marked by the arrows and pull the connector downward.



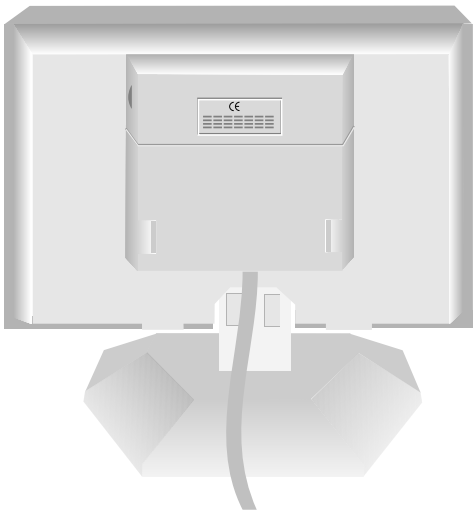
Assembly

Base stand

Insert the display in the base stand so that the groove (arrow) advances into the guide of the base stand and audibly engages.



Connect the plug connector on the rear of the BA69W and secure the cable cover panel. Connect the data cable to the cash-register system.



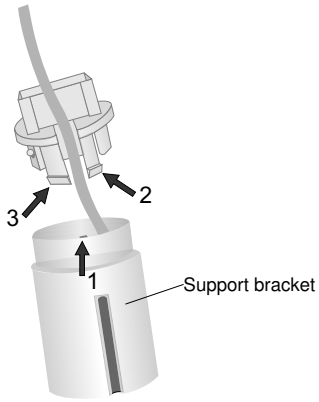
Tube assembly

First thread the cable for the display through the two tubes as shown in the illustration. There is a square recess in the short tube which is provided especially for the smaller plug connector of the BA69W. The plug connector can easily be guided from below through this recess.

✘ The lower tube depicted in the illustration is not a part of the packing list for the BA69W. The tube must have an outside diameter of 40 mm with a maximum wall thickness of 2 mm.

Before positioning the support bracket, check once again to be sure that the smaller plug connector is positioned at the top.

Then position the support bracket for the display on the short tube. When doing this, the slot (1) must be located between the two clips (2 and 3). Press downward firmly on the support bracket until it engages.

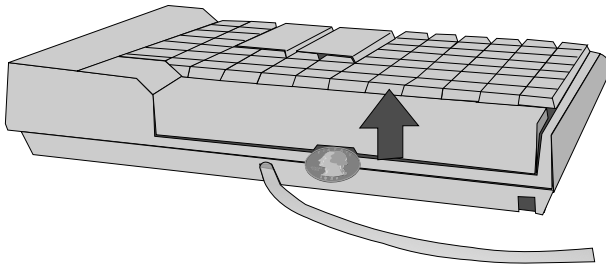


Now insert the display so that the groove (arrow) moves into in the guide of the support bracket and engages.

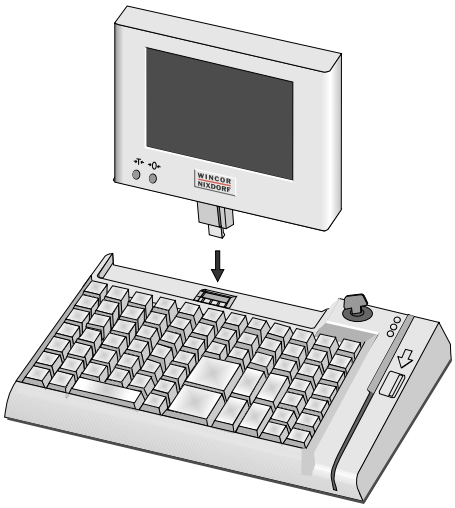
Secure the plug connector of the data cable as described in the chapter “Wire connections for the BA69W” (page 10).

TA85 Keyboard

First remove the cover on the keyboard. Insert a coin into the gap on the rear of the cover and pry the cover loose.



Mount the display on the keyboard (refer to the illustration).

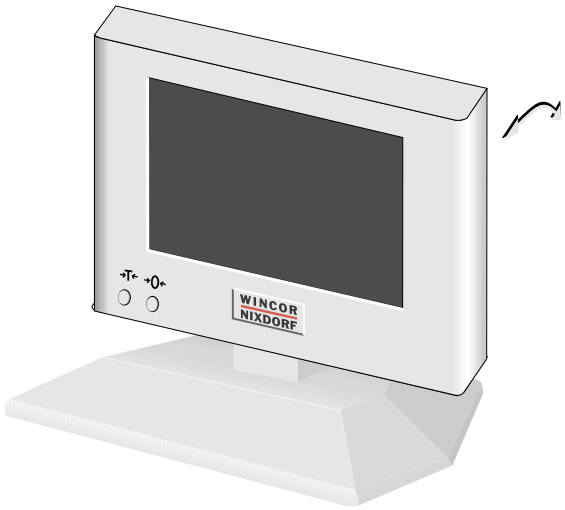


Secure the plug connectors of the data cable as described in the chapter “Wire connections for the BA69W”.

Adjustment options

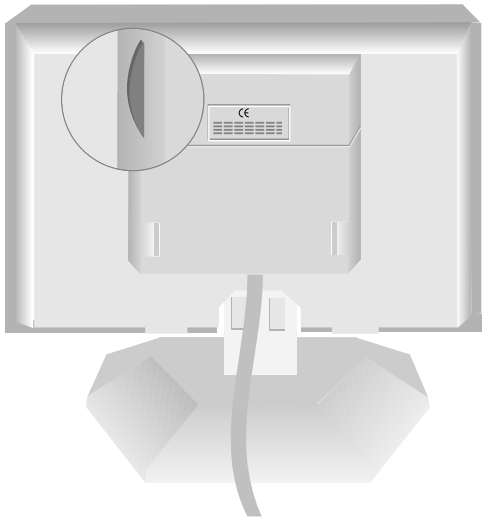
Rotating and tilting

You can tilt the display up to 45 degrees to the rear and 10 degrees forward. With the tube assembly, the display can also be rotated by up to 330 degrees.



Adjusting the contrast

You will find the rotary knob for the contrast setting on the rear of the display (refer to the enlarged section of the illustration).



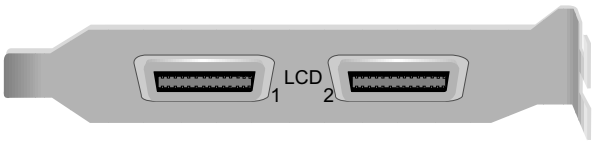
Controller

VGA/4 Controller MUX

The controller is suitable for connecting a combined POS and scale display. The BA69W display is always connected at the LCD2 jack.

This controller is used when the embedded scale controll has no VGA/4 interface.

Below: Illustration of the controller mask panel.



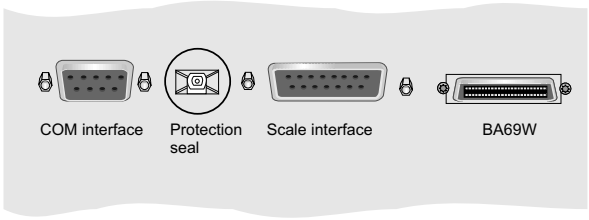
The installation of the controller is described in the BEETLE documentation in the chapter on “Installation of an expansion card.”

- Your cash-register system must have a free PCI slot.
- Remove any VGA card which might be present.

VGA/4 Embedded Scale Controller

The BA69W display is connected at the BA69W jack. Insert the data cable into the corresponding jack until the plug connector engages audibly.

Below is an illustration of the controller mask panel.



Furthermore the controller panel provides

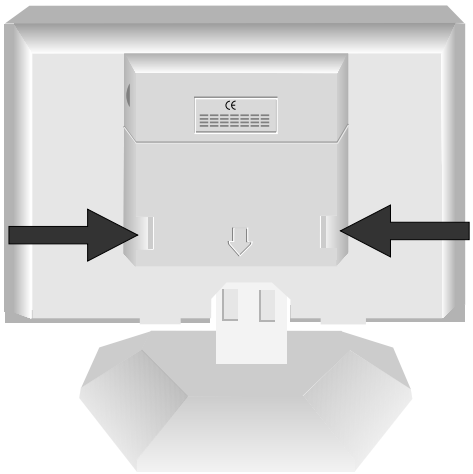
- ❒ a COM connector for the connection to the COM interface of the BEETLE system
- ❒ a seal for securing the scale calibration switch and
- ❒ an interface for connection a scale unit.

Replacing/Cleaning the glass cover

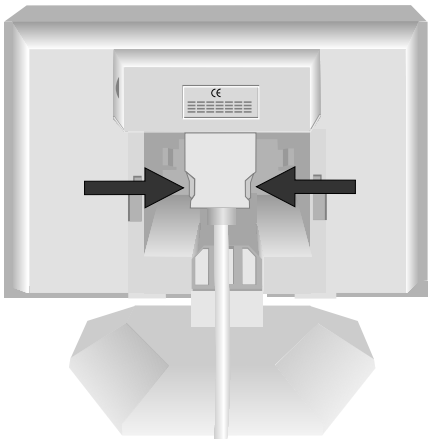
If the protective glass cover is scratched or cracked, you should replace it. Also, proceed as follows if you wish to clean the cover from the inside.

First switch the cash-register system off and disconnect the power plug.

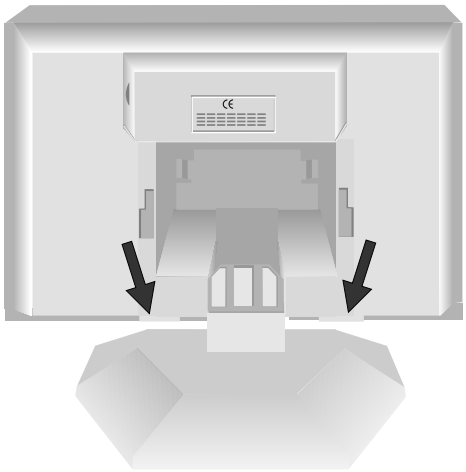
Then remove the cable cover panel on the display.



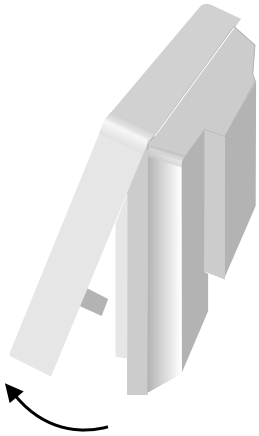
Disconnect the cable: To disconnect the cable, press on the releases on the plug connector marked by the arrows and pull the connector downwards.



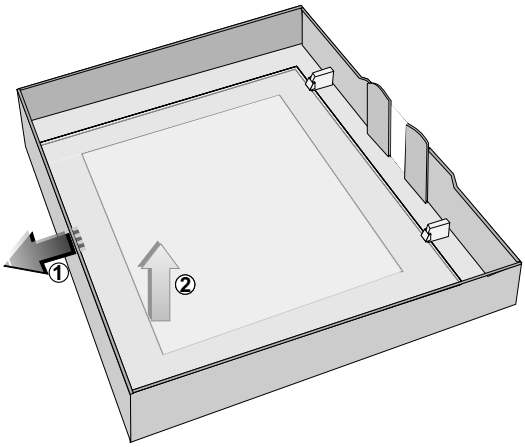
Now press the two release tabs on the rear of the display downwards.



The display cover can now be rotated forward.



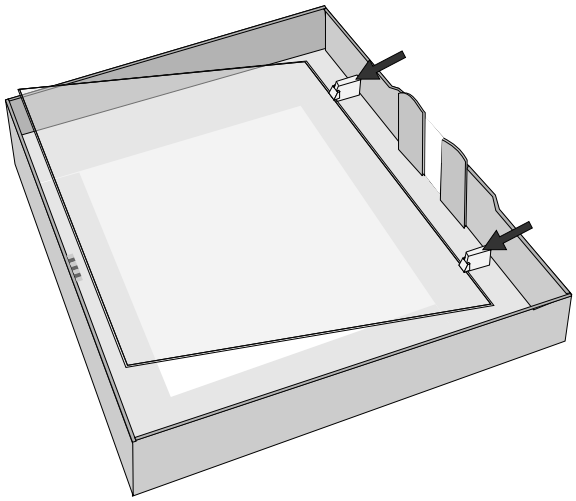
Release the glass cover by pulling the plastic section gently outward at the location marked (1) while simultaneously pressing the glass cover (2) out from the bottom.



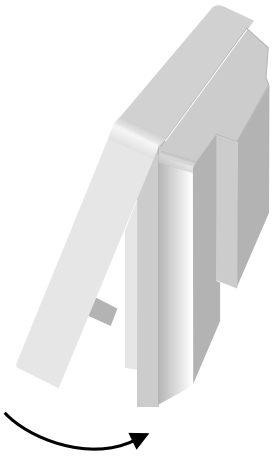
In order to avoid fingerprints on the inside of the new glass cover, grasp it only on the edges.

Avoid touching the display screen in the following steps.

Insert the new protective cover below the clip retainers shown in the illustration (below) and then press it carefully past the opposite alignment retainer.



Then position the display housing on the screen and close it until the lower locking tabs audibly engage.

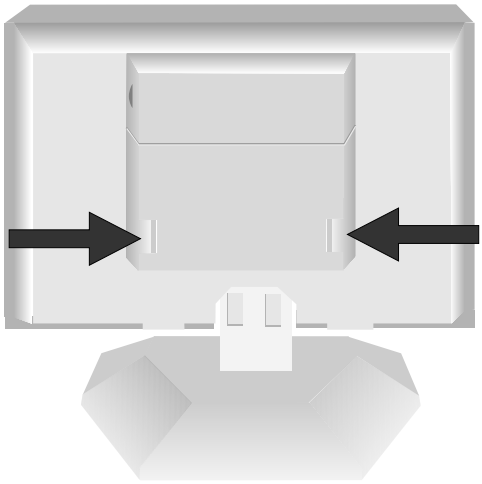


Replacing the backlighting

If the backlighting should malfunction, you can replace it with a few easy steps.

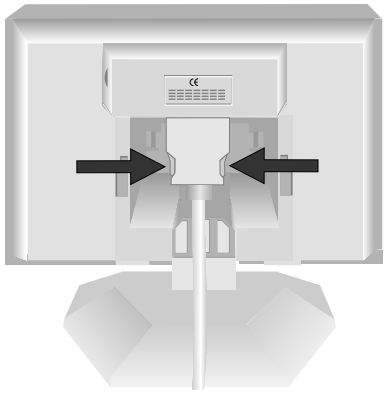
✘ First switch the cash-register system off and disconnect the power plug.

Then remove the cable cover panel on the rear of the display.



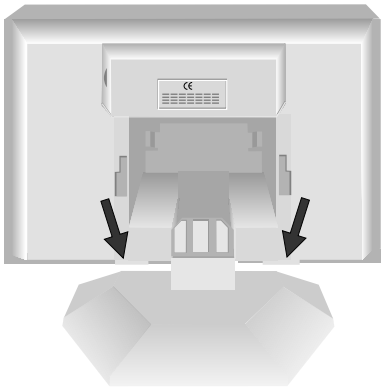
✘ A damaged backlighting is not covered by warranty engagement.

Disconnect the cable. To disconnect the cable, press on the releases on the plug connector marked by the arrows and pull the connector downward.

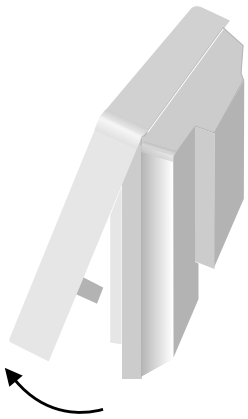


Now press the two release tabs for the front section on the rear of the display downward (refer to the illustration).

Avoid touching the display screen in the following steps. If the screen should get dirty, use a lint-free cotton cloth only to clean it.



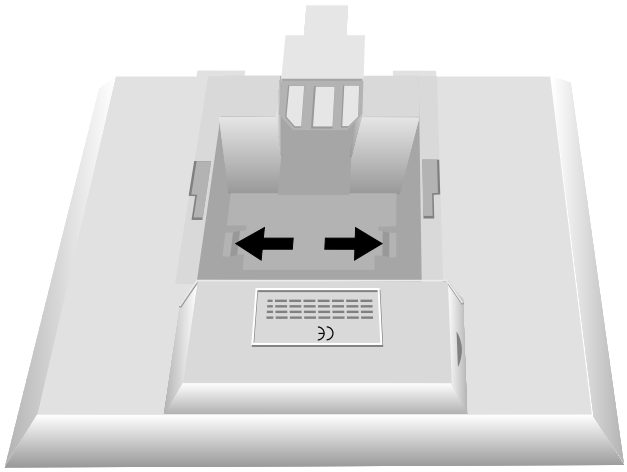
The cover of the display can now be rotated forward.



Pull the entire display upward and out of the support bracket and place it carefully on a smooth, clean and soft work surface with the screen side facing downward.

When the front cover is removed, grasp the display only on the rear plastic housing. If you do not do this, you could damage the internal display.

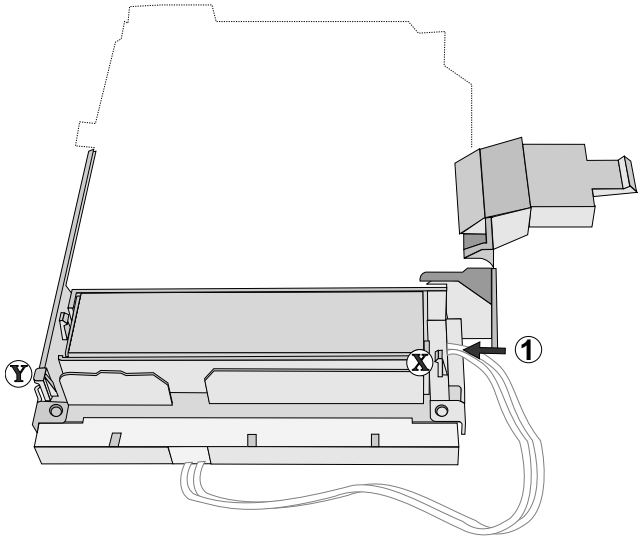
Press the retainers on the rear panel and remove the panel toward the top.



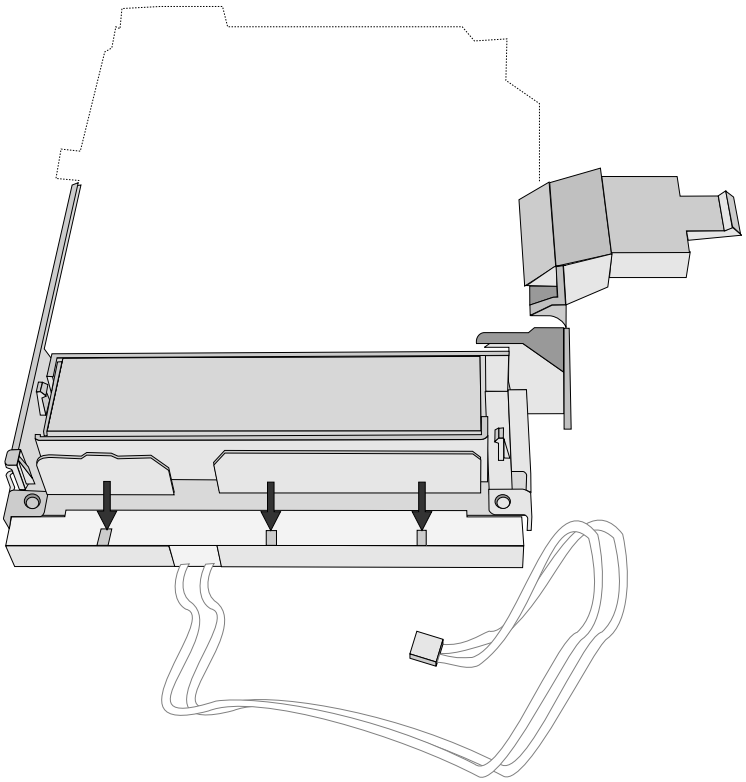
You will see the cable for the backlighting on the left side of the housing next to the inverter.

First lift the cable from the x-support bracket and then from the y-support bracket so that the cable is freed.

Pull out the plug connector (1) for the backlighting on the inverter.

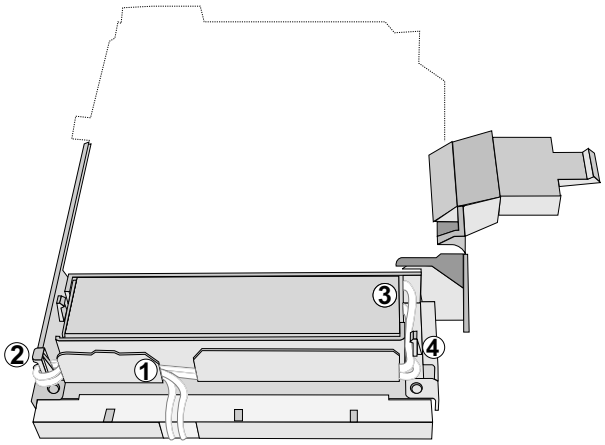


Now remove the cable from the channel. Then fold the three marked tabs upward and remove the backlighting on the cable vertically upward.



Do not touch the new backlighting on the glass body.

Insert the new backlighting and lock it in place by folding the tabs back. Position the cable in the cable channel (1) and around the cable retainer (2). Following that, plug the plug connector into the inverter (3) and route the cable in front of the second cable retainer (4).



Reassemble the display in the opposite order.

Appendix

Technical data BA69W

Technology	STN (Super Twisted Nematic)
Type	1/4 VGA monochrome
Size	5,7"
Resolution	320 (H) x 240 (V) pixel
Visible area	120 (H) x 89 (V) mm
Pixel format	0,36 x 0,36 mm
Brightness	approx. 120 cd
Contrast	approx. 25
Supply voltage	12 V, via LCD cable
Mounting	Base, tube , keyboard
Mode: VGA/4 controller MUX VGA/4 embedded scale ctrl.	 VGA Standard with 16 grey levels VGA/4 mode black/white with 1 pixel per bit
Climatic category	JEC 721-3-3- class 3K3
Current consumption	210 mA +12 V
Cable	Length: 2.50 m oder 1.50 m 20pol. twisted pair, EMC-shielded
Dimension	126 mm x 87 mm

VGA/4 Controller MUX

System interface	PCI
PCI-Frequency	max. 33 MHz
Bus	32 Bit
VGA Standard	Fully compatible
Connectors at bracket	**1.** 26pol MDR for LCD1 with power supply 12 V **2.** 26pol MDR für LCD2 iwith power supply 12 V
Current consumption	5V @ 400 mA

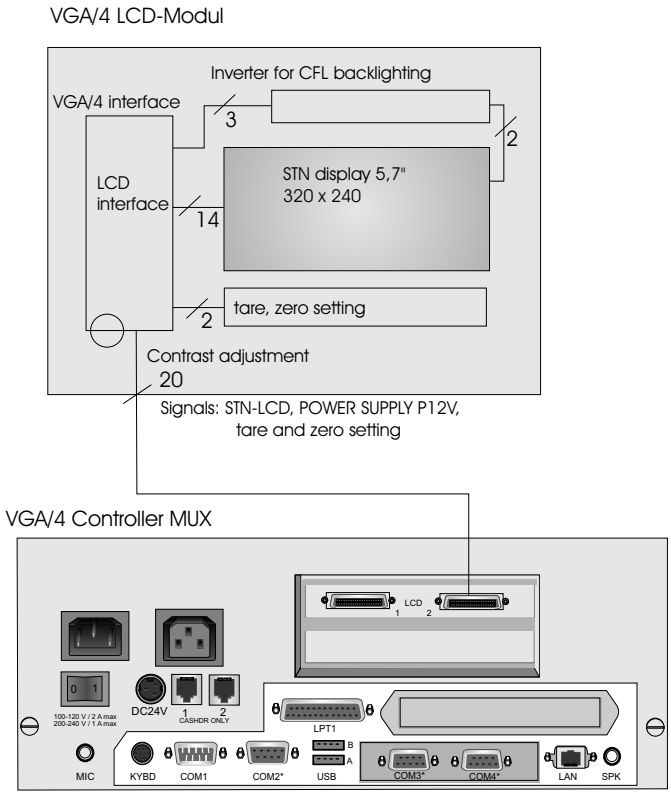
VGA/4 Embedded Scale Controller

System interface	RS 232
Speed	960bd
Protocoll	dialog6 extended
Mode	VGA/4, b/w, 1 bit per pixel
Connectors at bracket	26pol MDR with power supply 12 V for customer display
Current consumption	5V @ 350 mA 12 V @ 250 mA incl. scale

Hardware design

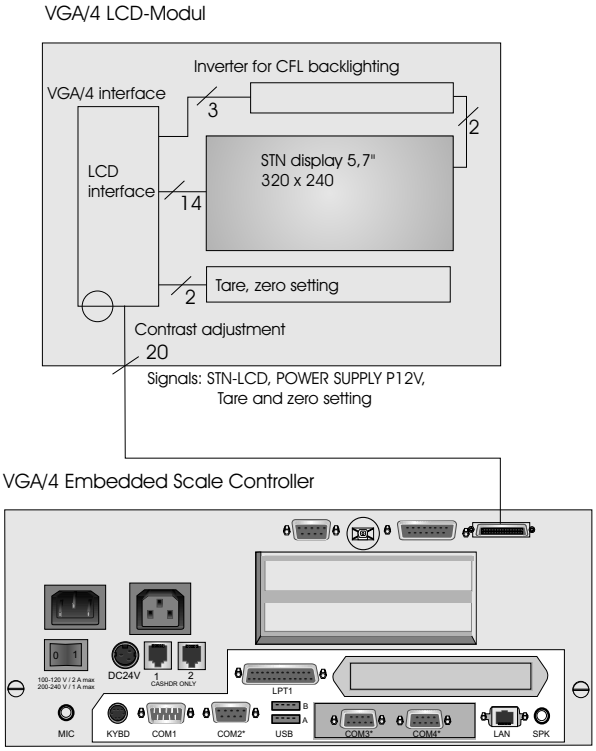
The block diagram shows the functions and the internal and external connections of the BA69W.

LCD Display



The 5.7-inch monochrome display with STN technology has a resolution of 320 x 240 picture elements.

Inverter



The inverter generates the high voltage of the LCD display which is necessary for the backlighting.

VGA/4 interface

The STN display and the inverter are linked via the internal VGA/4 interface. There is a potentiometer for contrast adjustment of the LCD. The interface is linked with the VGA/4 controller via a 20-pin plug connector.

VGA/4 controller MUX

The controller is configured as a PCI card with a VGA-compatible controller IC, the VGA-BIOS, the display memory, and the LCD interface. The LCD signals for the customer and operator displays are transmitted via two 26-pin plug connectors on the front mask.

VGA/4 embedded scale controller

The controller can be integrated to a system as an optional component.

A RS 232 interface is used for the data transfer of the controller.

The controller is equipped with a 16 bit microprocessor, a graphic IC with LCD interface, a firmware PROM, a static RAM and a UART.

The LCD signals for the BA69W will be transferred via a 26-pin connector.

Abbrevations

CFL	Cold cathode Fluorescent Lamp
COM	Communication Port
cUL	canada Underwriters Laboratories
EPROM	Erasable Programmable Read Only Memory
GS	Tested safety
GUI	Graphic User Interface
ISO	International Standardization Organization
LCD	Liquid Crystal Display
MDR	Mini Delta Ribbon (connector family of 3M)
OTP	One Time programmable (EPROM type)
PCI	Peripheral Component Interconnect
QS	Quality safety
RAM	Random Access Memory
ROM	Read Only Memory
SIMM	Single-In-Line-Memory-Modul
SMT	Surface-Mount-Technology (assembly form)
SRAM	Static Random Access Memory
STN	Super Twisted Nematic (LCD Technology)
VGA	Video Graphics Array
UL	Underwriters Laboratories